

C++ ASSIGNMENT

1.Ques :Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = n; i > 0; i /= 2) {
    c++;
}
```

Ans: $O(\log n)$

2.Ques :Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = n; i > 1; i /= i) {
    c++;
}
```

Ans: $O(1)$

3.Ques :Calculate the time complexity for the following code snippet where k is some constant ($k < n$).

```
int c = 0;
for(int i = 0; i < n; i += k) {
    c++;
}
```

Ans: $O(n)$

4.Ques:Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = 1; i < n; i *= 2) {
```

```
c++;  
}
```

Ans: $O(\log n)$

5.Ques: Calculate the time complexity for the following code snippet.

```
int c = 0;  
for(int i = 0; i < n; i++) {  
    c += i;  
}
```

Ans: $O(n)$

6.Ques: Calculate the time complexity for the following code snippet.

```
int c = 0;  
for(int i = 0; i < n; i++) {  
    for(int j = 0; j < i; j++){  
        c++;  
    }  
}
```

Ans: $O(n^2)$